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GENERAL NOTES.

GEOGRAPHY AND TRAVELS.¹

Miscellaneous.—Major-General Tillo has calculated, from the most reliable data, the lengths of various rivers, and gives the following as the eight longest: (1) Missouri-Mississippi, 4194 miles; (2) Nile, 4020; (3) Yang-tsze-kiang, 3158; (4) Amazon, 3063; (5) Yenisei-Selenga, 2950; (6) Amur, 2920; (7) Congo, 2883; (8) Mackenzie, 2868. The map of Humphreys & Abbot is the authority for the Missouri-Mississippi, which Klöders gives as 3658 miles.

AMERICAN NOTES.—Governor Fontana, of Chubut, has recently explored the Chubut and its tributary, the Charmate, passing through the Andes by a very low pass, since the confluence of the two mentioned rivers is only eighteen hundred feet above sea-level, and at sixteen hundred feet above the sea the valley of the Cercorado, a river flowing into the Pacific, was reached. On their return the party found a large lake, through which the river Senguel flows. The Welsh colony on the Lower Chubut will probably colonize on this lake.

Don Jose Santelices has ascended Licancaur, a volcano on the eastern boundary-line of the Chilian province of Antofogasta. Tambos—houses of a single room, with a low, stone bench—are found on the Inca road which leads to the summit. The crater was found to have a bottom thirteen hundred feet in diameter, with a pond four hundred feet by three hundred and fifty feet in its centre. On its banks there are remains of some thirty large stone houses built by the Indians, and a large quantity of fuel

¹ Edited by W. N. LOCKINGTON, Philadelphia.

was found there,—whether carried there by the Peruvians or by the Calchaquis, who opposed them, is not certain.

AFRICAN NOTES.—The Wagenia, or Wenga, who live near Stanley Falls, are stated by O. Baumann, of Dr. Jenz's Expedition, to be on friendly terms with Tippoo Tib, and thus far to have not been demoralized by the influence of the Arabs.

Stanley reached Bansa-Manteka, below Stanley Pool, before March 29. He intends to ascend the Mburu, which is now known to be navigable for some distance. From the head of navigation he will strike across country to the Albert Nyanza at Murswur, where he will form a fortified camp, and whence he will send boats to inform Emin Bey of his arrival. It appears that the intercourse on both banks of the Kongo above Stanley Pool is interrupted by the attacks of the natives upon the caravans.

Tippoo Tib has discovered a tribe of people whose money consists of copper spears. These people make highly-artistic metal-work, and manufacture enormous spear-heads of very thin copper, which are passed from hand to hand like bank-notes. In the purchase of ivory one is worth two hundred pounds. Everything among them has its value reckoned in terms of spears.

Lieutenant Baert has recently ascended the Mongalla, a northern tributary of the Congo considerably to the east of the Mobangi, as far as the limit of navigation, and to a distance of two hundred miles from its mouth. The river flows in a general southward direction through a well-wooded country, and the rapids, which stayed farther ascent, occur in about $3^{\circ} 30'$ N. latitude and 22° E. longitude. As this is north of the latitude reached upon the Welle by Dr. Junker, it looks as though the latter river must certainly be cut off from joining the Mobangi.

It is evidently premature to suppose that the Welle is identical with the Mobangi, although Dr. Junker followed its course to $22^{\circ} 47' 40''$ E. and $3^{\circ} 13' 10''$ N. latitude. Its level is not accurately known, and it may turn into the Congo by some other course, or even find its way to Lake Tchad.

Four months later than the advices brought by Dr. Junker, Emin Pasha, accompanied by Dr. Vita Hassan, ten Egyptian officers, three Greeks, and four negroes, visited the capital of Unyoro, and sent a message to Mwanga, king of Uganda, requesting an audience. This was granted to Emin, Hassan, and the three Greeks only, but permission to pass through Uganda to Zanzibar was refused.

It is quite evident that the Arabs are masters of the Upper Congo, and Tippoo Tib's appointment as Governor of Stanley Falls Station is virtually a surrender of that part of the river into their hands.

Lieutenant Wissmann has been exploring in the land of the

Baluba and the basin of the Lubilash. He and De Macar, the commander at Luluaburg, visited the residence of Mona Tenda, near the Lukula. The people are Bashilange, and the country is densely populated. The eastern bank of the Lukula belongs to the Baluba, and forms an undulating prairie, which, though barren in appearance, has a numerous population. Wissmann intends to go north and explore the region where the Lulongo, Juapa, and Lomami have their sources.

The Rev. G. Grenfell, in a recent ascent of the Kwango in the "Peace," found a large tributary, the Juma, entering the river from the east, and bearing so great a quantity of water that it was doubtful which was the larger stream. He ascended the great bend of the Kwango, which at $4^{\circ} 30'$ south comes back to its northerly course. The Kikunji Falls, which stopped his ascent, are only about three feet high. Mr. Grenfell has since returned to England.

M. Grandidier and Mr. Sibree, in the *Antananarivo Magazine* (Christmas, 1886), point out that about thirty miles of canal would convert the channels and lagoons of the east side of Madagascar into an extensive internal water-way of great commercial value.

The "Bolletino" of the Italian Geographical Society publishes a detailed account of the Italian possessions on the Red Sea. Assab and the surrounding district is absolutely annexed, while Massowa, Emberemi, the Abd-el-Kader Peninsula, Gherar, the Taulud Island, and the Dahlak Archipelago are garrisoned and administered by Italy, and the coast from Annesley Bay to Assab is under Italian protection.

Dr. Colin contributes to the *Revue d'Anthropologie* a paper on the Malinkes of Bambouk, once a ruling race upon the Upper Niger, but now divided into numerous little states, and apparently without a religion, though they were once Mohammedan. Their territory is about six hundred kilometres long and from eighty to one hundred and fifty in width.

Don Manuel Iractier has paid two visits to the newly-acquired Spanish territory on the east coast of Africa. On his last journey (1884-85) he traversed four thousand miles between the equator and 3° N. latitude, penetrating from the seaboard to about 20° E. longitude, and surveying to their sources all the streams between the Rio del Campo and the Gaboon. Of these by far the largest is the Muni, which debouches in Corisco Bay, after receiving the waters of the Utamboni, Noya, and other affluents, and draining nearly six thousand square miles.

Major Serpa Pinto and Lieutenant Cardoso have arrived in Lisbon, after exploring the region between Mozambique and Lake Nyassa. The Lienda, a tributary of the Rovuma, was found not to rise in Lake Nmaramba, but to flow through that basin from Mount Songe, farther to the west.

ASIATIC NOTES.—Messrs. James, Younghusband, and Fulford have recently travelled from Mukden, the capital of South Manchuria, up one of the tributaries of the Yalu, and through the main chain of mountains by a pass two thousand seven hundred feet high to the Chang Peishan, or ever-white mountain. This is a recently extinct volcano, with a clear lake in its crater. The loftiest of the peaks around this crater is seven thousand five hundred and twenty-five feet above the sea. The sides are composed of disintegrated pumice. This mountain is the centre of the river-system of Manchuria, since the rivers Yalu, Tumen, and Sungari all have their sources there. Descending the Sungari, the party went to Kirin, and thence to Tsitsihar, the capital of Northern Manchuria. Southeast of Tsitsihar they crossed a high and undulating steppe, with numerous brackish lakes, from the earth of the shores of which soda and salt are obtained.

M. Potanin left the Koko-Nor June 25, 1886, crossed the Gobi from south to north, and discovered four parallel mountain-ranges continuing the Altai chain to the southeast. That part of the Nan-Shan Mountains which separates the plains of Southern Mongolia from the region drained by the Hoang-ho is composed of three mountain-ranges, with passes twelve thousand eight hundred feet high and valleys ten thousand feet above the sea. On his way north he fell in with the before-unknown tribe of Jegurs. He surveyed the country passed over.

Sr. E. Modigliani has visited Nias, an island some thirty miles from the west coast of Sumatra. The natives are fierce savages, everywhere addicted to head-hunting, and the rajah of Bavolavalani had no idea of collecting skulls except from the living subject. Owing to local feuds the explorer did not go far into the interior; yet on a second visit contrived to bring away a large quantity of valuable material. The natives of Nias are evidently Malays; yet their crania look as though a Papuan skull were fastened to a Malay face. Their weapons are of iron, and they work iron, brass, and gold for themselves. They have axes, barbed lance-heads, and swords like the parangs of the Dyaks. Their shields are heavy and coated with buffalo-hide, and they make curious iron helmets. Their swords are sheathed in wood, and have a globular wicker or rotang basket in front. Every young man must have cut off one head,—no matter if of man, woman, or child.

MM. Bonvalot and Capus, the French travellers who have recently been turned back by the Emir of Afghanistan, write to the French Geographical Society that the country between Teheran and Meshed belongs to the steppe region of Central Asia by its fauna, flora, and geology. The journey between these places was, for most of the way, on the edge of an immense basin, the bottom of which is the Khevir, or great salt desert.

From the bridge of Saugil to the Thian Shan, from west to east, such a thing as a forest is not known.

Manipur is a valley surrounded by mountain-ranges which have a rain-fall as high as or higher than one hundred and twenty inches. The valley has but thirty-nine inches of rain-fall. The snow-line is low here. The whole valley, three thousand feet high, was covered with hoar-frost in December, and Sarameti, under thirteen thousand feet high, has, the natives say, snow all the year. Dr. G. Watt correlates the lowness of the snow-line with the immensity of the rain-fall, which in winter is a snow-fall. This great rain-fall accounts for the volume of water brought down by the Irawadi, while a river travelling for hundreds of miles in Thibet would pick up but a small quantity.

General J. T. Walker recently read before the Geographical Society of London a paper upon the Lu River of Thibet, the Lu Kiang or Lu-tse-Kiang of the Chinese. This river is generally held to be the source of the Salween, but General Walker adduces reasons for believing it to be that of the Irawadi.

Freiherr von Schleinitz has recently accomplished a survey of Huon Gulf, in German New Guinea, establishing the direction of the coast-line, and the position of the reefs and of eight hitherto unknown harbors. He has discovered nine new rivers. One of these, the Markham, has a broad valley extending far inwards between high mountain-ranges. The south coast of Huon Gulf consists of primitive and metamorphic rocks, with sedimentary rocks and volcanic formations. A further survey afterwards made of the coast, from Astrolabe Bay to the mouth of the Empress Augusta River, led to the discovery of a series of bays, harbors, islands, and rivers.

EUROPEAN NOTES.—*Spain*.—It is high time that some common errors regarding the condition of Spain were corrected. It is commonly believed that the country is unprogressive and the people semi-mediæval. This is far from being the case. Spain is advancing with a rapidity quite equal to that of other western European nations, but, as she started later, she is still behind. Her population, unlike that of France, is continuously on the increase, and, as there is still plenty of room in the country, it is likely to keep on increasing until, in a few decades, Spain will again claim her right to stand among the foremost nations of Europe. Most of the great central plain of Castille and Leon is capable of the closest cultivation, and probably received it in the days of Moorish occupation, for it is crossed by numerous mountain-ranges, which give rise to many rivers. The coast provinces and the Ebro Valley are capable of supporting an immense population, and do so in spots that are favored by the application of the necessary industry. There are at the present time twenty-two millions of people in Spain, whereas at the end of the reign

of Charles III. it is probable that the population barely reached eight millions. Some figures given by Sr. Costanzo Stella in the *London Times* show clearly the progress of the country. The agricultural population, which was but three million six hundred and fifteen thousand eighty-five years ago, is now nine million three hundred and twenty-eight thousand, and the area cultivated has increased from fifty-three million acres to one hundred and ninety-three million five hundred thousand. The head of cattle have doubled since the commencement of the century, and the industrial population has trebled. In 1860 exports and imports together were only twenty-five million eight hundred thousand pounds, whereas they are now fifty-six millions. The wine of Spain, which two decades ago could not be brought into the world's market, except from spots situated within easy distance by bullock-wagon of some port, can now be borne upon six thousand miles of railway, and the produce is reckoned at four hundred and sixty-one million two hundred and fifty-six gallons.

Prof. Miguel Marazta has discovered, in the valley of Rebas (Gerona, Spain), at the end of the Eastern Pyrenees, a race of dwarfs not more than four feet high. All have red hair, broad faces, strongly-developed jaws, flat noses, and rather oblique eyes. A few hairs take the place of a beard in the males, and the sexes are very much alike. The lips do not quite cover the large, projecting incisors. They live by themselves, intermarry, and have no chance of improvement. Are they the remnants of some old Mongoloid stock?

The last French census (May, 1886) shows an increase of only one per cent. per annum, and the last German census one of .71 per cent. per annum. In both cases this is a decrease in the rate, Germany, as well as France, having commenced to proportion its increase to the means of subsistence.

GEOLOGY AND PALÆONTOLOGY.

The Sea-Saurians of the Fox Hills Cretaceous.—The reptiles of the sea of the Fox Hills epoch possess considerable interest as being the last of their race; for the next epoch (the Laramie) saw, as is well known, the beginning of the lacustrine conditions which prevailed throughout the interior of North America, in one region or another, during the subsequent ages of Cænozoic time. The vertebrate fauna was more or less changed, especially so as regards the inhabitants of the waters. The most important modification of this kind with which we are acquainted is the extinction of the order Sauropterygia from the interior waters of North America. I have made some attempt to collect remains of these animals, but without any great success, for two reasons. One of these is the rarity of the specimens; the other is the disarticulated condition in which they are usually found.